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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,685	02/27/2004	Jered Donald Aasheim	MS1-1067USC1	9363

22801 7590 06/03/2005

LEE & HAYES PLLC
421 W RIVERSIDE AVENUE SUITE 500
SPOKANE, WA 99201

EXAMINER

PEIKARI, BEHZAD

ART UNIT PAPER NUMBER

2189

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,685

Applicant(s)

AASHEIM ET AL.

Examiner

B. James Peikari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3 IDSs.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. The examiner wishes to thank applicant's representative Jim Patterson (#52,103) for the courtesies extended during the telephone conversation of May 12, during which the examiner asked applicant's representative to explain certain features of the claims.

Drawings

2. The drawings are objected to because the drawing views are not in accordance with 37 CFR 1.84(u)(1). For example, "FIG. 1" should replace "Fig. 1".

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: the first paragraph of the specification should be amended to include the current status of the parent application, i.e., “, now U.S. Patent No. 6,901,499”.

Appropriate correction is required.

4. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 9, 20 and 33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Except for when a memory is fresh from the factory (and even then it might be difficult), there is no way to write to a FLASH memory without it having to be erased

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first. After reading applicant's specification, the following correction is suggested for claim 9: in line 8, replace "first" with "in direct response to the issuance of a write request associated with said data". Similar language may be used in claims 20 and 33.

In order to write to any FLASH memory, the array must be erased at some time prior to the write.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wells et al., U.S. 5,822,781, in view of Holzhammer et al., U.S. 5,630,093.

The claimed invention, directed to flash memories and including a free sector manager, tables to show the physical to logical address mapping, and associated logic and methods was well known in the art at the time of the invention and (with the exception of the ability to re-establish an erased map – see below) would have been taught by almost any flash memory system on the market at the time the invention was made.

Wells et al. has been cited as an example of memory systems in use at the time of the invention. Wells et al. contained a FLASH memory free sector manager (*solid*

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state disk controller 64) that kept track of valid and invalid and good and dirty sectors, among other types (*note column 4, lines 10 et seq.*), including a table for physical to logical sector address mapping (*note table 84*), providing the ability to write to a next free physical sector as indicated by the free sector manager (*note column 13, lines 64 et seq.*, the section on Writing to a Sector), without the sector having to be erased in response to the issuance of a particular write request (*i.e., because they are erased ahead of time to make free sectors*).

As for the further features of the FLASH memory be selected from the group consisting of NAND or NOR components – these were the only kinds of FLASH available on the market. This is still true today.

One features which was known for use with flash memories, but was not as common as the features described above, was the claimed ability to re-establish a map in the table after it has been erased. For example, Wells et al. never mentioned such a feature. However, Holzhammer et al. taught keeping backup copies of mapping tables, to re-establish the maps in case of a failure or deletion of the original (*note Figure 12 of Holzhammer et al.*).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the backup copies of mapping tables of Holzhammer et al., to re-establish the maps in case of a failure or deletion of the original, in the system of Wells et al., disclosed above, since this would have provided a greater measure of fault-tolerance, which would have led to greater efficiency and cost savings,

especially when compared to systems that rebuilt maps from scratch, without a backup to copy from.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Peikari whose telephone number is (571) 272-4185. The examiner is generally available between 7:00 am and 7:30 pm, EST, Monday through Wednesday, and between 5:30 am and 4:00 pm on Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim, can be reached at (571) 272-4182.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 central hotline at (571) 272-2100.

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Any response to this action should be mailed to:

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or faxed to:

(703) 746-7239 (Official communications)

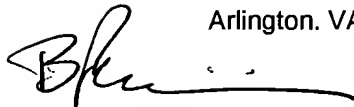
or:

(703) 746-7240 (for Informal or Draft communications)

or:

(703) 746-7238 (for After-Final communications)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).



B. James Peikari
Primary Examiner
Art Unit 2186

5/30/05